# Shower Max Central 400 Hz
# Power Harness Modification Instructions

**March 16, 1999**

The following instructions provide the steps needed to recycle the Rabbit crate harnesses for use with the Shower Max crates on the Central detector. There are 3 harnesses used for every Shower Max crate. Two connect to the type A supply and one connects to the type B supply

Care should be taken when choosing the harnesses to determine the correct length. There should be plenty to choose from, as the Shower Max crate will only use ½ the number of power supplies as did the Rabbit system. The wires need to be routed straight down though the top of the Shower Max crates between the shrouds of the backplane connectors to the power lugs on the backplane.

These harnesses were fabricated with *Anderson Powerpole* connectors at the power supply end and ring terminals at the crate end. The Powerpole connectors are modular by design and allow for removal of a given wire and its connector.

When removing a wire from the harness, remove the single pole modular connector from the cluster housing. This is done by removing the retaining pin from the housing and sliding off the desired connector and replacing the cluster back in the housing and reinstalling the retaining pins.

The Harness for the "A" type supply requires 2 harnesses, 1 for each connector on the power supply. These 2 identical harnesses will be reconfigured into A1 & A2, which will be different after the modification.

The harness wires connect to the 400 Hz supplies at one end and connects to the SMD Shower Max crate at two different locations.

1. The backplane.
2. The SMC Transition card using AMP high current connectors (Cable Harness A1).

There are also three wires that will be run to the CMU preamplifiers. These will have inline fuse holders crimped onto the existing #12 wires approximately 6" from the power supply and 11 foot, #18 wires will crimp to the other end of the fuse and extend to the CMU preamplifiers.

# A1 Cable Harness

Power Supply Connector Modification:

1. Replace the +5v (yellow) contact in the power supply connector with a contact having the Yellow #12 wire and a Red #18 wire crimped together. The #12 wire will go to the SMD Crate, and the #18 wire will go to supply the CMU.

Connection to Crate:

Wires dedicated to supplying power to CMU.

1. -5v (green #12) cut 6 inches from the power supply connector and crimped to one end of an inline fuse. An 11 foot green #18 wire is crimped to the other end of the fuse holder.
2. GND (white #14) cut 6 inches from the power supply connector and connected to an 11 foot white #18 wire using a butt splice connection.
3. +5v (red #18) cut 6 inches from the power supply connector and crimped to one end of an inline fuse. An 11 foot red #18 wire is crimped to the other end of the fuse holder.

Connect with ring terminals to backplane power bugs.

1. +5v (yellow #12) connect to backplane, right most +5V terminal.
2. GND (white #12) connect to backplane, right most GND terminal.

Terminate into 2 Pos. AMP Connector #54489-2, using crimp contact #54329-1.

5. +15v (red) Circuit 1.
6. -15v (black) Circuit 2.

## A2 Cable Harness

Power Supply Connector Modification:

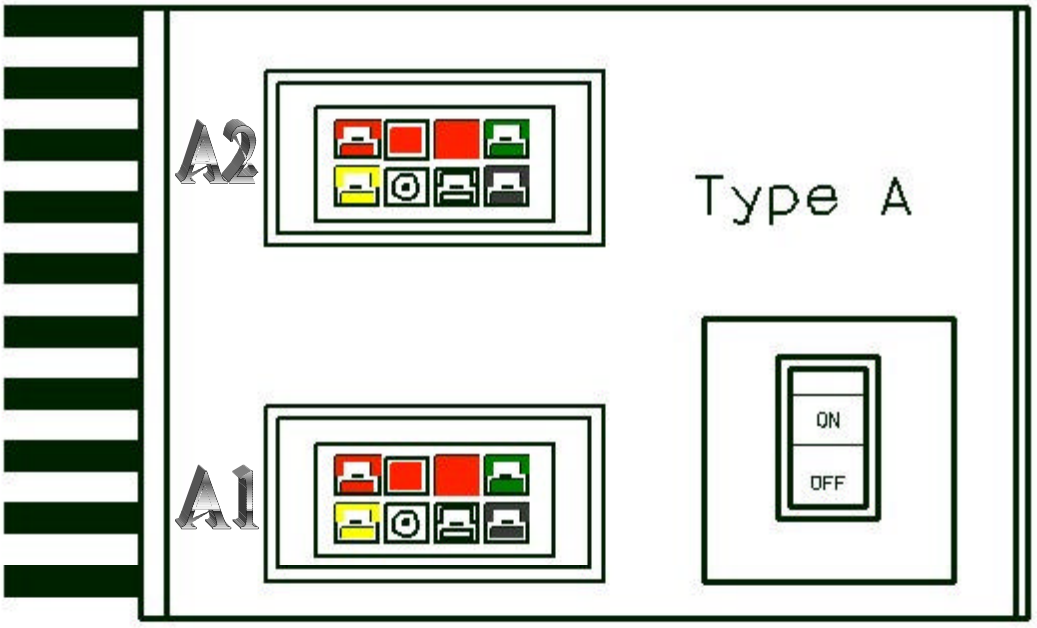
Remove the following wires by clipping them as close as possible at the rear of the insert within the cluster housing.

1. –5v (green #12)
2. +15v (red #12 )
3. –15v (black #12)
4. GND (white #14)

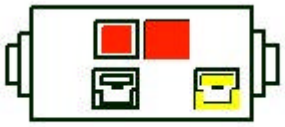
Connection to Crate:

Connect with ring terminals to backplane power bugs.

3. +5v (yellow #12) connect to backplane, left most +5V terminal.
4. GND (white #12) connect to backplane, left most GND terminal.




A1 Cable Harness



A2 Cable Harness

## B1 Cable Harness

Power Supply Connector Modification:

Remove the following wire by clipping it as close as possible at the rear of the insert within the cluster housing.

1. –8v (blue #12), the shorter of the two blue wires, 27 inches long.

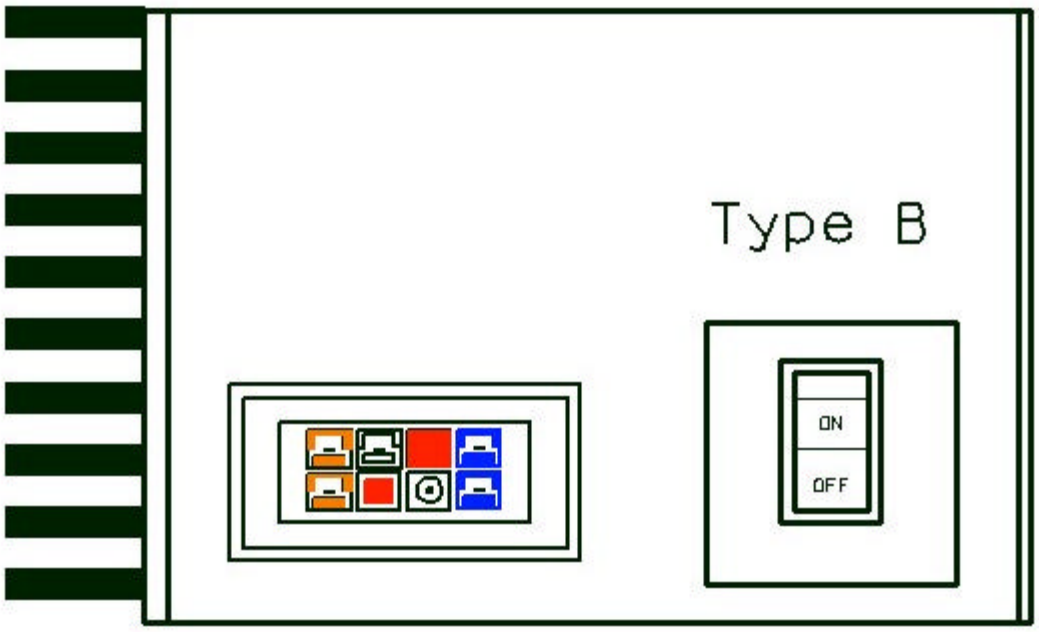
Replace the following wires with 37 inch long #12 wires.

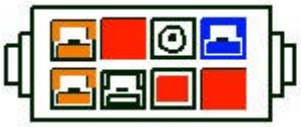
2. +8 (orange #12), the shorter of the two orange wires, 27 inches long.
3. GND (white #12), the shorter of the two white wires, 27 inches long

Connection to Crate:

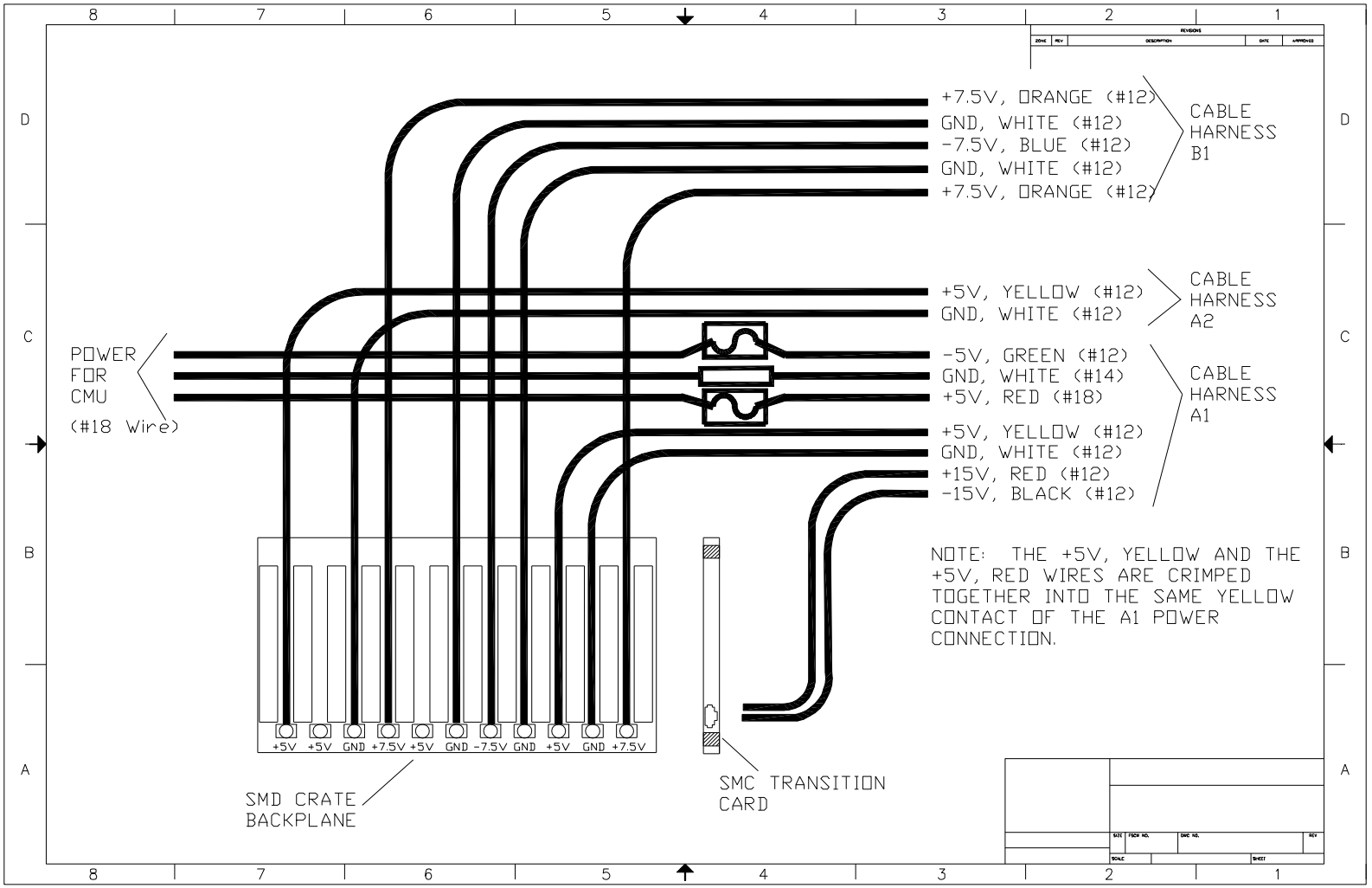
Connect with ring terminals to backplane power bugs.

1. +8 (orange #12) connect to backplane, left most +7.5V terminal.
2. +8 (orange #12) connect to backplane, right most +7.5V terminal.
3. -8 (blue #12) connect to backplane, sole –7.5V terminal.
4. GND (white #12) connect to backplane, GND terminal to right of –7.5V terminal.
5. GND (white #12) connect to backplane, GND terminal to left of –7.5V terminal.



B1 Cable Harness


+7.5V, ORANGE (#12)
GND, WHITE (#12)
-7.5V, BLUE (#12)
GND, WHITE (#12)
+7.5V, ORANGE (#12)
CABLE HARNESS B1
+5V, YELLOW (#12)
GND, WHITE (#12)
CABLE HARNESS A2
-5V, GREEN (#12)
GND, WHITE (#14)
+5V, RED (#18)
+5V, YELLOW (#12)
GND, WHITE (#12)
+15V, RED (#12)
-15V, BLACK (#12)
CABLE HARNESS A1
POWER FOR CMU
(#18 Wire)
NOTE: THE +5V, YELLOW AND THE +5V, RED WIRES ARE CRIMPED TOGETHER INTO THE SAME YELLOW CONTACT OF THE A1 POWER CONNECTION.
+5V +5V GND +7.5V +5V GND -7.5V GND +5V GND +7.5V
SMD CRATE BACKPLANE
SMC TRANSITION CARD